

MEDICAL SCHOOL

CALIFORNIA STATE BOARD OF HEALTH

Weekly Bulletin



GEORGE E. EBRIGHT, M. D.  
PRESIDENT

FRED F. GUNDRUM, M. D.  
VICE PRESIDENT

A. J. SCOTT, JR., M. D.

EDWARD F. GLASER, M. D.

ADELAIDE BROWN, M. D.

ROBERT A. PEERS, M. D.

WALTER M. DICKIE, M. D.  
SECRETARY AND EXECUTIVE OFFICER

Entered as second-class matter February 21, 1922, at the post office at Sacramento, California, under the Act of August 24, 1912.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917.

Vol. IV, No. 20

JUNE 27, 1925

GUY P. JONES  
EDITOR

THE PREVENTION AND TREATMENT OF SCARLET FEVER.

WILLIAM H. PARK, M.D.,

Director of the Bureau of Laboratories, Department of Health, New York City.

Scarlet fever has for centuries been such a dreaded disease that ever since bacteria were discovered as the cause of disease, investigations have been in progress to determine the casual organism in this disease. As far back as 1895 a form of streptococcus apparently similar to the one that occurs generally in abscesses and in erysipelas was found to be regularly present in enormous numbers in the throats of scarlet fever cases. There was no way of separating this streptococcus from the similar ones in these other diseases and therefore, it was not accepted by most as a cause of scarlet fever.

In 1902, Doctor Moser in Vienna, feeling convinced that this streptococcus was probably the cause of scarlet fever injected a killed broth culture repeatedly into horses. After a number of months he found that their serum seemed to be antitoxic. When severe cases of scarlet fever were given large injections of this serum, the symptoms rapidly abated. He found the best results were obtained when the serum was given early in the disease.

A few years later a Russian, Gabritschewsky, relying upon the results obtained with Moser's serum and the continued finding of streptococci in scarlet fever throats decided to try to immunize children with the toxic broth and killed culture. He found the surprising fact

that about 15 per cent of the children who received one-half of a cubic centimeter of the toxic culture fluid developed scarlet fever rashes and a few of these developed a sore throat and the strawberry tongue so characteristic of scarlet fever. At the same time he found that those who had recovered from scarlet fever did not develop these rashes and also that the streptococci obtained from cases of erysipelas did not produce the rash. From these results he believed that he had added to the proof that scarlet fever was a disease like diphtheria except that the streptococcus took the place of the diphtheria bacillus. The infection started in the throat, the toxins were made there and later absorbed and thus caused the rash and the early toxic symptoms. Unlike diphtheria, in some of the cases the streptococcus penetrated the diseased mucous membrane and invaded the body whose resistance had been reduced by the toxic effects of the scarlet fever poison and thus developed in addition to the early toxic poisoning a true invasion of the body by the living cocci, so that ear trouble, infection of the glands and even septicaemia or puerperal fever developed. Followers of Gabritschewsky in Russia carried on his methods and many thousands of children were immunized with apparently good results.

Partly because this was done in far away Russia and the results were mostly described in the Russian language, not



very much attention was paid to these startling discoveries. The war then intervened and with it the practical separation of Russia from the rest of the world.

A number of years now elapsed without anything new being added concerning the cause and the prevention of scarlet fever. During this time the Schick test was devised by Professor Schick of Vienna to detect susceptibility to diphtheria, and later Doctor Schultz and Doctor Charlton discovered the fact that serum from a case convalescing from scarlet fever when injected into the inflamed skin of a case of scarlet fever caused a bleaching of that portion, so that the skin was as white as a normal skin.

A year ago three Americans published the results of their investigations which when added to that of the work done by the Austrian Moser and the Russians, have probably cleared up the cause, the prevention and the treatment of scarlet fever.

Doctor Dochez, a physician in the Presbyterian Hospital and a teacher in Columbia University, making use of the knowledge obtained by him in some investigations, tried to produce in horses an antitoxin for scarlet fever through the injections of these streptococci into a mass of agar jelly previously injected in the horses. His idea was that the germs growing in this agar jelly would produce a toxin which would stimulate the development of antitoxin and if this developed, he could use the test devised by Schultz and Charlton and thus prove that he had an antitoxic serum and this would help greatly to add to the force of previous discoveries that this special streptococcus was different from other streptococci and was the cause of scarlet fever. If these results were accomplished he would then test out the serum in the treatment of cases. His attempt was successful and a serum was produced in horses which proved to be antitoxic and which proved to have marked beneficial effects in the treatment of toxic cases of scarlet fever.

Absolutely independent of Dochez, Dr. George and Dr. Gladys Dick in Chicago, conceived the idea that while the toxin of this scarlet fever streptococcus was apparently harmless in animals, it might cause a specific reaction in the human skin. The fact that scarlet fever does not occur in animals but does in man, suggested this possibility. When tested out they found that their supposition was correct. The broth filtered entirely free from the streptococcus was found

to contain the poison, so that 1/10,000th of a cubic centimeter delivered in one-tenth of a c.c. of salt solution would cause a slight reaction very similar to the so well known reaction following the injection of a tiny amount of diphtheria toxin and thus, the Dick test has become of almost equal importance to the Schick test. This test enabled them to very easily determine whether those who had not had scarlet fever would react and whether those who had scarlet fever would not react. Also whether a case of scarlet fever on the first day would react and after a few days would cease to react. They found that their results were very similar to Gabritschewsky who used the cruder method of subcutaneous injections and they were able to demonstrate that it was possible by one large or several smaller injections to change the reaction of the body from a positive reaction to the toxin to a negative one; that is immunity had been produced.

Through this test they and those following in their footsteps have been able to show that children who have given a negative test when exposed have not developed scarlet fever but those who show a positive test may develop it.

In our laboratory we have demonstrated that children become immune in the course of about two weeks but that this immunity is not as lasting as that following the preventive injections of diphtheria toxin-antitoxin. At the end of nine months a fairly large proportion of the children who were immunized have ceased to be protected. It seems therefore, that possibly the use of the scarlet fever toxin for the purpose of immunization will be restricted for the immediate time of an outbreak and that those who have been immunized will need to be again immunized if in a year or longer they are again exposed. The use of the scarlet fever antitoxin developed either by the method of Moser, the Austrian or of Dochez gives very striking results. Reports have been issued of the use of this antitoxin by Doctor Blake showing that the temperature would drop within twelve hours and a patient with a rash like a boiled lobster and symptoms showing intense poisoning would already be convalescing. We have used a serum prepared by us after the method of Moser, the Russians, and the Dicks, with very good results and it seems already safe to say that the scarlet fever antitoxin will give equally good results in scarlet fever as the diphtheria antitoxin does in diphtheria.

Thirty years of experimental work



have thus been crowned with success and I think we now have a right to hope that scarlet fever like diphtheria can gradually be eradicated.—*Child Health Bulletin.*

People would have better health if they would remember that their stomach is a work room and not a play house.

#### 14 Points in Mental Hygiene.\*

The essence of happy life lies in mental health. Physical health means little except that it brings mental health.

The mind needs right condition. It needs care, exercise and even doctoring quite as much as the body. Mental ill health shows itself in nervousness, inefficiency, discontent, unreasonable likes and dislikes, jealousy, fear. These illnesses are rooted in habit, bad living conditions and bad ways of thinking. They may be cured by one who will pay the price in effort, self analysis and will power. The result is worth the price—worth many times the price. The rules for winning and keeping mental health are the sum and substance of all psychology. Here are the rules. Try to keep them for six months and observe the gain in your happiness:

1. Acquire the habit of emotional self-control. Conscious repression is a source of strength.
2. Harden yourself to endure slights, criticisms, prejudice, dislike, even abuse. This psychic hardening is highly important, if the mind is to keep unwounded and healthy. Extreme sensitiveness is unhealthy.
3. Improve the senses. Exercise them, learn to see more, hear more, taste more, smell more and touch more accurately. Exercise the senses deliberately every day.
4. Put aside unhealthy images and ideas. Don't fight them particularly, but turn your attention to something interesting and healthy.
5. Increase the accuracy of your thinking. Exercise the mind while at work and at play; the good mind is both firm and swift.
6. Control your attention, always attend wholly to the matter at hand. Your capacity will increase by this exercise. Never let attention dwell on the useless or painful.
7. Study your normal positions and movements and adopt them con-

sciously when standing or sitting. Your natural attitudes are the best for you.

8. Learn to practice. If you find a thing hard to do, but desirable, figure out exercises. Your capacity will rise along the well-known "Practice Curve."
9. Learn to relax. Muscular relaxation removes fatigue, both physical and mental.
10. Imitate good models. First realize that you are bound to imitate in almost every act of life. Then surround yourself with people you want to resemble in given qualities. Keep away from others.
11. Increase your physical and mental lightness. We walk too heavily, think too heavily, play too heavily.
12. Establish health motivation principles. Be sure your ruling motives are good. Don't be impelled by hatred, jealousy and so on, as many people are, even when they do good things.
13. Establish normal relations with other people—normal morally and socially. City dwellers often live in an abnormal world. Many people hardly touch the world at all.
14. Establish a healthy philosophy of living, have a good goal. You may change it occasionally, but be sure of what you want to accomplish today, tomorrow, next month and in ten years.

In the case of preventable disease one is under three obligations; first to oneself, second the community, third, the medical advisers.

In the game of life the man who uses his resources wisely is as certain of success as the football coach who uses his players skillfully. It pays to play the game.

#### MORBIDITY.\*

##### Diphtheria.

74 cases of diphtheria have been reported, as follows: Los Angeles 13, San Francisco 11, Oakland 5, Los Angeles County 5, Sacramento 5, Glendale 7, Tulare County 1, Sonoma County 1, Hawthorne 2, San Diego 1, Stanislaus County 4, Berkeley 2, Fillmore 1, Merced County 1, Santa Cruz County 1, Kings County 1, Vacaville 1, San Mateo County 1, Chico 1, Alameda 1, Kings County 2, Los Banos 1, Rialto 1, Long Beach 2, Piedmont 2, Pittsburg 1.

##### Measles.

47 cases of measles have been reported, as follows: Los Angeles 21, Los Angeles County

\* From the summer school course in Public Health and Nursing at Cleveland, Ohio.

\* From reports received on June 22 and 23 for week ending June 20.



8, San Francisco 4, Merced County 1, South Gate 1, San Diego 2, Huntington Park 2, Sacramento 1, Eureka 2, Fillmore 4, Pittsburg 1.

#### Scarlet Fever.

78 cases of scarlet fever have been reported, as follows: Los Angeles 19, San Francisco 14, Oakland 6, Long Beach 2, Chico 1, Colusa County 1, Berkeley 1, Fillmore 1, Santa Monica 1, San Jose 4, Solano County 1, San Mateo County 1, Bakersfield 1, Santa Ana 1, Taft 2, El Segundo 1, Santa Clara County 3, Palo Alto 1, Kern County 3, Los Angeles County 3, Alhambra 1, San Diego 3, Tulare County 3, Stockton 2, Torrance 1, Long Beach 1.

#### Smallpox.

74 cases of smallpox have been reported, as follows: Los Angeles 33, Oakland 15, San Diego 5, Glendale 3, Sacramento 1, Berkeley 1, Lynwood 3, Los Angeles County 1, Long Beach 2, Stockton 1, Siskiyou County 3, Tulare County 1, Petaluma 1, San Francisco 2, San Bernardino 2.

#### Typhoid Fever.

14 cases of typhoid fever have been reported, as follows: Riverside 1, Los Angeles 1, Los Angeles County 1, Santa Ana 1, Kings County 2, Oakdale 1, San Diego County 1, Tulare County 1, Pasadena 1, San Joaquin County 2, San Francisco 1, California 1.

#### Whooping Cough.

234 cases of whooping cough have been reported, as follows: Los Angeles 50, San Diego 34, San Francisco 25, Los Angeles County 15, Pasadena 14, Stockton 9, Long Beach 8, Berkeley 6, Huntington Park 5, San Diego County 8, Burbank 6, Riverside 19, Oakland 3, Tulare County -1, Monrovia 2, Alhambra 3, Whittier 1, Tracy 2, Colusa 1, Sacramento 3, Fillmore 1, Albany 1, Gilroy 4, Fresno 2, Fresno County 1, Oxnard 1, Los Banos 3, Orange County 1, Glendale 1, Santa Clara County 1, Daly City 1, Anaheim 1, Pittsburg 1.

#### Epidemic Meningitis.

2 cases of epidemic meningitis have been reported, as follows: San Francisco 1, Fresno 1.

#### Epidemic Encephalitis.

2 cases of epidemic encephalitis have been reported, as follows: Sacramento 1, Colton 1.

#### Epidemic Jaundice.

Anaheim reported one case of epidemic jaundice.

#### Poliomyelitis.

14 cases of poliomyelitis have been reported, as follows: Oakland 2, Los Angeles 2, San Francisco 2, Berkeley 2, Los Angeles County 2, Inyo County 1, Stanislaus County 1, San Diego County 1, Burbank 1.

### COMMUNICABLE DISEASE REPORTS.

| Disease               | 1925        |        |         |   | 1924        |        |         |   |
|-----------------------|-------------|--------|---------|---|-------------|--------|---------|---|
|                       | Week ending |        |         | Reports for week ending June 20 received by June 23 | Week ending |        |         | Reports for week ending June 21 received by June 24 |
|                       | May 30      | June 6 | June 13 |   | June 1      | June 7 | June 14 |   |
| Anthrax               | 0           | 1      | 0       | 0   | 0           | 0      | 0       | 0   |
| Chickenpox            | 210         | 195    | 182     | 137   | 303         | 274    | 339     | 171   |
| Diphtheria            | 97          | 98     | 91      | 74  | 251         | 224    | 241     | 239   |
| Dysentery (Bacillary) | 4           | 3      | 1       | 1   | 0           | 7      | 1       | 1   |
| Epidemic Encephalitis | 1           | 5      | 2       | 2   | 4           | 4      | 2       | 2   |
| Epidemic Jaundice     | 0           | 0      | 0       | 1   | 0           | 0      | 0       | 0   |
| Epidemic Meningitis   | 6           | 2      | 1       | 2   | 1           | 5      | 1       | 1   |
| Gonorrhoea            | 120         | 102    | 96      | 83  | 86          | 131    | 107     | 78  |
| Influenza             | 22          | 21     | 13      | 12  | 14          | 17     | 7       | 6   |
| Leprosy               | 1           | 1      | 0       | 0   | 0           | 1      | 0       | 1   |
| Malaria               | 1           | 0      | 1       | 0   | 8           | 11     | 4       | 5   |
| Measles               | 79          | 85     | 63      | 47  | 603         | 663    | 500     | 343   |
| Mumps                 | 285         | 280    | 250     | 191   | 82          | 57     | 71      | 35  |
| Pneumonia             | 44          | 62     | 103     | 32  | 29          | 103    | 37      | 35  |
| Poliomyelitis         | 9           | 19     | 19      | 14  | 0           | 1      | 2       | 0   |
| Scarlet Fever         | 112         | 123    | 96      | 78  | 173         | 168    | 111     | 117   |
| Smallpox              | 130         | 120    | 89      | 74  | 183         | 185    | 146     | 120   |
| Syphilis              | 152         | 241    | 140     | 121   | 108         | 157    | 183     | 80  |
| Tuberculosis          | 146         | 195    | 166     | 227   | 157         | 205    | 202     | 164   |
| Typhoid Fever         | 18          | 17     | 26      | 14  | 16          | 27     | 18      | 27  |
| Whooping Cough        | 358         | 362    | 388     | 234   | 43          | 45     | 57      | 39  |
| Totals                | 1795        | 1932   | 1727    | 1344  | 2061        | 2285   | 2029    | 1464  |

CALIFORNIA STATE PRINTING OFFICE